

1 ABSTRACT OF THE DISCLOSURE

2       An ultrasonic sensor has a pair of ultrasound transducers and is adapted to be inserted in  
3 and able to perform at a single site of introduction into a duct, a manifold, or a pipe. The  
4 ultrasonic sensor measures a forward ultrasonic path transit time and a second reverse ultrasonic  
5 path transit time of ultrasound signals propagating in a fluid. The arrangement being such that a  
6 comparison of the signal associated with ultrasound travel in one direction with that of the signal  
7 associated with ultrasound travel in the opposite direction enables the flow rate of the fluid in the  
8 duct to be determined. The ultrasonic sensor may utilize a curved reflecting surface on the duct  
9 and a reflective surface of an ultrasonic sensor end cap or housing to provide forward and reverse  
10 ultrasonic W-shaped paths.